

MINNESOTA ENERGY RESOURCES - NNG

DESIGN-DAY DEMAND SUMMARY

NOVEMBER 1, 2019

NNG

Design Day Requirement		277,376
Total Peak Day Entitlement		314,349
2018/19 Firm Peak Day Actual Sendout	1/29/2019	268,848
Firm Annual Throughput - Minnesota		24,568,312
No. of Firm Customers		201,190
Department Load Factor Calculation		25.04%

MINNESOTA ENERGY RESOURCES - NNG

NNG MINNESOTA DESIGN DAY REQUIREMENTS

NOVEMBER 1, 2019

NNG

Pipeline Group	2018/19 Customer Count	Zone Total Customer Count	1/20 Design DDD	Regression Factors		Regression Total	Regression Adjustment	1/20 Requirements Regression Load	Estimated Contract Demand Units	Total *
				Intercept	Slope					

PEAK										
NNG	201,190	201,190	99	6,734	2,641	267,600	9,681	277,281	95	277,376
Total	201,190	201,190								277,376

OFF PEAK										
NNG	201,190	201,190	55	6,734	2,641	152,006	9,682	161,688	95	161,783
Total	201,190	201,190								161,783

* Adjusted for customer growth

MINNESOTA ENERGY RESOURCES - NNG

DESIGN-DAY DEMAND PER CUSTOMER - GS
NOVEMBER 1, 2019

NNG

<u>Heating Season</u>	<u>No. of Firm Customers</u>	<u>Design Day Requirements</u>	<u>MMBtu /Customer /Day</u>
19/20	201,190	277,376	1.38
18/19	198,628	273,842	1.38
17/18	197,991	267,783	1.35
16/17	195,311	262,324	1.34
15/16	192,016	259,076	1.35
14/15	189,078	273,917	1.45
13/14	189,254	258,913	1.37
12/13	187,545	239,325	1.28
11/12	185,890	247,982	1.33
10/11	186,610	234,907	1.26

MINNESOTA ENERGY RESOURCES - NNG

SUMMER/WINTER USAGE - Dth
PROJECTED 12 MONTHS ENDING JUNE 2020
NNG

<u>Class</u>	<u>Summer Apr-Oct</u>	<u>Winter Nov-Mar</u>	<u>Total</u>
GS	6,786,860	17,766,439	24,553,300
SVI	494,515	1,197,653	1,692,167
SVJ	4,941	7,625	12,566
LVI	496,010	616,547	1,112,556
LVJ	713	1,734	2,447
SLV			0
Total	<u>7,783,038</u>	<u>19,589,998</u>	<u>27,373,036</u>

Minnesota Energy Resources Corporation
 2019-2020 Demand Entitlement
 MERC-NNG
 November 1, 2019

Capacity Surplus/Shortage				3,414	33,559	36,973
Non-Heating Season Capacity Surplus/Shortage	(25,509)	39,299	13,790			
*Not included in Heating Season Total entitlement						
Reserve Margin	-15.56%	24.08%	8.52%	1.25%	12.08%	13.33%

MINNESOTA ENERGY RESOURCES - NNG
RATE IMPACT OF THE PROPOSED DEMAND CHANGE
NOVEMBER 1, 2019

All costs in \$/Dth	Base Cost of Gas G011/MR-17-564 1-Jul-19	Demand Charge Oct 1, 2018	Demand Charge Demand Filing Nov 1, 2018 (as revised 7/2/19)	Most Recent PGA Oct 1, 2019	Proposed Effective Nov 1, 2019	Result of Proposed Change			
						Change from Last Rate Case	Change from Nov 1, 2018 Demand Filing	Change from Last PGA %	Change from Last PGA \$

1) General Service Residential: Avg. Annual Use:		87		Dth					
Commodity Cost	\$3.6673	\$3.4787	\$3.9141	\$2.9213	\$3.6657	(\$0.0016)	(\$0.2484)	25.48%	\$0.7444
Demand Cost	\$0.9363	\$0.9367	\$0.9493	\$0.9493	\$0.9227	(\$0.0136)	(\$0.0266)	-2.80%	(\$0.0266)
Commodity Margin	\$2.4116	\$2.4116	\$2.4116	\$2.4686	\$2.4686	\$0.0570	\$0.0570	0.00%	\$0.0000
Total Cost of Gas	\$7.0152	\$6.8270	\$7.2750	\$6.3392	\$7.0570	\$0.0418	(\$0.2180)	11.32%	\$0.7178
Avg Annual Cost	\$610.78	\$594.39	\$633.40	\$551.92	\$614.42	\$3.64	(\$18.98)	11.32%	\$62.50
Effect of proposed commodity change on average annual bills:									\$64.81
Effect of proposed demand change on average annual bills:									(\$2.31)

2) Small C&I Firm, Class 2: Avg. Annual Use:		687		Dth					
Commodity Cost	\$3.6673	\$3.4787	\$3.9141	\$2.9213	\$3.6657	(\$0.0016)	(\$0.2484)	25.48%	\$0.7444
Demand Cost	\$0.9363	\$0.9367	\$0.9493	\$0.9493	\$0.9227	(\$0.0136)	(\$0.0266)	-2.80%	(\$0.0266)
Commodity Margin	\$1.6885	\$1.6885	\$1.6885	\$1.6857	\$1.6857	(\$0.0028)	(\$0.0028)	0.00%	\$0.0000
Total Cost of Gas	\$6.2921	\$6.1039	\$6.5519	\$5.5563	\$6.2741	(\$0.0180)	(\$0.2778)	12.92%	\$0.7178
Avg Annual Cost	\$4,320.83	\$4,191.59	\$4,499.23	\$3,815.55	\$4,308.48	(\$12.35)	(\$190.75)	12.92%	\$492.93
Effect of proposed commodity change on average annual bills:									\$511.18
Effect of proposed demand change on average annual bills:									(\$18.25)

3) Large C&I Firm Class 3: Avg. Annual Use:		17,946		Dth					
Commodity Cost	\$3.6673	\$3.4787	\$3.9141	\$2.9213	\$3.6657	(\$0.0016)	(\$0.2484)	25.48%	\$0.7444
Demand Cost	\$0.9363	\$0.9367	\$0.9493	\$0.9493	\$0.9227	(\$0.0136)	(\$0.0266)	-2.80%	(\$0.0266)
Commodity Margin	\$1.6885	\$1.6885	\$1.6885	\$1.2453	\$1.2453	(\$0.4432)	(\$0.4432)	0.00%	\$0.0000
Total Cost of Gas	\$6.2921	\$6.1039	\$6.5519	\$5.1159	\$5.8337	(\$0.4584)	(\$0.7182)	14.03%	\$0.7178
Avg Annual Cost	\$112,920.62	\$109,543.11	\$117,583.10	\$91,812.05	\$104,694.39	(\$8,226.23)	(\$12,888.71)	14.03%	\$12,882.34
Effect of proposed commodity change on average annual bills:									\$13,359.31
Effect of proposed demand change on average annual bills:									(\$476.97)

4) Small C&I Interruptible, Class 2: Avg. Annual Use:		3,942		Dth					
Commodity Cost	\$3.6673	\$3.4787	\$3.9141	\$2.9213	\$3.6657	(\$0.0016)	(\$0.2484)	25.48%	\$0.7444
Commodity Margin	\$0.9740	\$0.9740	\$0.9740	\$1.0453	\$1.0453	\$0.0713	\$0.0713	0.00%	\$0.0000
Total Cost of Gas	\$4.6413	\$4.4527	\$4.8881	\$3.9666	\$4.7110	\$0.0697	(\$0.1771)	18.77%	\$0.7444
Avg Annual Cost	\$18,295.41	\$17,551.97	\$19,268.26	\$15,635.83	\$18,570.15	\$274.75	(\$698.11)	18.77%	\$2,934.33
Effect of proposed commodity change on average annual bills:									\$2,934.33

5) Large C&I Interruptible, Class 3: Avg. Annual Use:		25,685		Dth					
Commodity Cost	\$3.6673	\$3.4787	\$3.9141	\$2.9213	\$3.6657	(\$0.0016)	(\$0.2484)	25.48%	\$0.7444
Commodity Margin	\$0.5329	\$0.5329	\$0.5329	\$0.9453	\$0.9453	\$0.4124	\$0.4124	0.00%	\$0.0000
Total Cost of Gas	\$4.2002	\$4.0116	\$4.4470	\$3.8666	\$4.6110	\$0.4108	\$0.1640	19.25%	\$0.7444
Avg Annual Cost	\$107,881.42	\$103,037.26	\$114,220.44	\$99,312.96	\$118,432.75	\$10,551.33	\$4,212.31	19.25%	\$19,119.79
Effect of proposed commodity change on average annual bills:									\$19,119.79

Note: Average Annual Use based on new class structure found in 2018 MERC Gas Rate Design in Docket GR-17-563
 Note: Rates do not include the ACA adjustment.

MINNESOTA ENERGY RESOURCES - NNG
RATE IMPACT OF THE PROPOSED DEMAND CHANGE

NOVEMBER 1, 2019

NNG

IV. NORTHERN NATURAL GAS COMPANY'S RATES -- CURRENT COST OF GAS EFFECTIVE							01-Nov-19	
	Tariff-Summer(7 mths)	Tariff-Winter(5 mths)	Wt. Annual	GRI	Total			
TF-12B	112495 \$ 5.6830	\$ 10.2300	\$7.5776	\$0.0000	\$7.5776			
TF-12B Discount	112495 \$ 5.6830	\$ 10.0320	\$7.4951	\$0.0000	\$7.4951			
TF-12V	112495 \$ 5.6830	\$ 13.8660	\$9.0926	\$0.0000	\$9.0926			
TF-5	112495 \$ -	\$ 15.1530	\$15.1530	\$0.0000	\$15.1530			
TFX	112486 \$ 5.6830	\$ 15.1530	\$9.6288	\$0.0000	\$9.6288			
TFX-5	112486 \$ -	\$ 15.1530	\$15.1530	\$0.0000	\$15.1530			
TFX-5 Discount	112486 \$ -	\$ 10.0320	\$10.0320	\$0.0000	\$10.0320			
TFX Rochester	112486 \$ 37.1175	\$ 37.1175	\$37.1175	\$0.0000	\$37.1175			
TFX Rochester II	112486 \$ 10.7714	\$ 10.7714	\$10.7714	\$0.0000	\$10.7714			
TFX - Discount	111866 \$ 2.2192	\$ 15.1392	\$7.6025	\$0.0000	\$7.6025			
TFX - Discount	111866 \$ 4.8640	\$ 4.8640	\$4.8640	\$0.0000	\$4.8640			
TFX - Discount	111866 \$ 5.4720	\$ 5.4720	\$5.4720	\$0.0000	\$5.4720			
TFX-5	127852 \$ -	\$ 15.1530	\$15.1530	\$0.0000	\$15.1530			
Gas Cost					\$2.5220 /Dth			

V. ANNUAL SALES -- As approved in Docket No. G011/MR-17-564 264,337,861

VI. MERC-NNG'S CURRENT COST OF GAS EFFECTIVE: 01-Nov-19

		Contract #(s)	Monthly Entitlements (Dth)	Months	Rate (\$/Dth)		Contract Costs	Rate/Therm
A. GS-NNG	TF12B (Max Rate) Winter	112495	46,580	5	\$ 10.2300	=	\$2,382,567	\$ 0.01006
	TF12B (Max Rate) Summer	112495	46,580	7	\$ 5.6830	=	\$1,852,999	\$ 0.00782
	TF12V (Max Rate)	112495	32,929	12	\$ 9.0926	=	\$3,592,923	\$ 0.01517
	TF5 (Max Rate)	112495	36,275	5	\$ 15.1530	=	\$2,748,375	\$ 0.01160
	TF12B (Discount-Winter)	112495	5,200	12	\$ 7.4951	=	\$467,694	\$ 0.00197
	TFX12 (Max Rate)	112486	10,822	12	\$ 9.6288	=	\$1,250,434	\$ 0.00528
	TFX Apr (Max Rate)	112486	2,000	1	\$ 5.6830	=	\$11,366	\$ 0.00005
	TFX Oct (Max Rate)	112486	2,000	1	\$ 5.6830	=	\$11,366	\$ 0.00005
	TFX5 (Max Rate)	112486	77,688	5	\$ 15.1530	=	\$5,886,031	\$ 0.02485
	TFX5 (Discount)	112486	1,800	5	\$ 10.0320	=	\$90,288	\$ 0.00038
	TFX12 (Discount)	111866	1,283	12	\$ 4.8640	=	\$74,886	\$ 0.00032
	TFX12 (Discount)	111866	8,271	12	\$ 5.4720	=	\$543,107	\$ 0.00229
	TFX12 (Discount)	111866	11,921	12	\$ 7.6025	=	\$1,087,553	\$ 0.00459
	TFX5 (Discount)	111866	379	5	\$ 4.8640	=	\$9,217	\$ 0.00004
	TFX5 (Discount)	111866	2,445	5	\$ 5.4720	=	\$66,895	\$ 0.00028
	TFX5 (Discount)	111866	22,189	5	\$ 15.1392	=	\$1,679,619	\$ 0.00709
	Windom		2,500	12	\$ -	=	\$0	\$ -
	Northwestern Energy		1,035	12	\$ 8.3382	=	\$103,560	\$ 0.00044
Total Demand Cost							\$21,858,881	\$ 0.09227
Test year sales as approved in Docket No. G011/GR-17-563							236,895,506	
GS-1 Demand Current Cost of Gas/therm								\$ 0.09227
GS-1 Commodity Current Cost of Gas/therm								\$ 0.36657
Total GS-1 Current Cost of Gas/therm								\$ 0.45884

B. GS-NNG, SVI-NNG, LVI-NNG, SJ-NNG, LJ-NNG, SLV-Commodity		Monthly Entitlement (Dth)	Months	Rate (\$/Dth)	Contract Costs	Contract Costs	Rate (\$/therm)
FDD - Reservation	118657	81,508	12	\$ 1.7140	=	\$1,676,457	\$ 0.00634
FDD - Storage Cycle	118657	939,864	5	\$ 0.3567	=	\$1,676,248	\$ 0.00634
FDD - Reservation	118657	5,550	12	\$ 3.3157	=	\$220,826	\$ 0.00084
FDD - Storage Cycle	118657	64,000	5	\$ 0.6901	=	\$220,832	\$ 0.00084
FDD - Reservation	133736	17,345	12	\$ 1.7140	=	\$356,752	\$ 0.00135
FDD - Storage Cycle	133736	200,000	5	\$ 0.3567	=	\$356,700	\$ 0.00135
FDD - Reservation	132024	8,672	12	\$ 1.7140	=	\$178,366	\$ 0.00067
FDD - Storage Cycle	132024	100,000	5	\$ 0.3567	=	\$178,350	\$ 0.00067
Firm Deferred Delivery Storage Contracts						\$4,864,530	\$ 0.01840

Per Docket No. G-007/M-07-1402-05 dated August 6, 2014, storage demand charges will be allocated through the commodity charge effective 11/1/2014.

		Monthly Entitlement (Dth)	Months	Rate (\$/Dth)	Contract Costs	Contract Costs	Rate (\$/therm)
Bison	FT0003	50,000	12	\$ 17.4896	=	\$10,493,750	\$ 0.03970
NBPL	T8673F	50,000	12	\$ 6.3905	=	\$3,834,300	\$ 0.01451
TFX12 (Rochester)	112486	10,500	12	\$ 37.1175	=	\$4,676,805	\$ 0.01769
TFX12 (Rochester II)	112486	34,500	12	\$ 10.7714	=	\$4,459,360	\$ 0.01687
TFX12 (SE MN Expansion)	112486	8,032	12	\$ 9.6288	=	\$928,062	\$ 0.00351
						\$24,392,277	\$ 0.09228

Per Doct No. G-007/M-10-1166 and G-011/M-10-1168 dated January 26, 2015, recover the costs associated with Bison contract through commodity effective

	Annual Sales (Dth)		Rate (\$/Dth)	Commodity Cost	Rate Case Sales (therm)	Rate (\$/therm)
CD-1 Commodity	26,433,786	x	\$2.5220	\$66,666,009	264,337,861	\$ 0.25220
SMS-Bal Service	272,160	x	\$2.1800	\$593,309	264,337,861	\$ 0.00224
Physical Forward Start Premium				\$0	264,337,861	\$ -
Call Option Premium				\$384,268	264,337,861	\$ 0.00145
GS-NNG, SVI-NNG, LVI-NNG, SJ-NNG, LJ-NNG, SLV Commodity Current Cost of Gas/therm				\$72,508,115	264,337,861	\$ 0.36657

MINNESOTA ENERGY RESOURCES - NNG

**Financial Options
 Heating Season 2019-2020**

Units - Gas Daily Peaker Packages (Physical)

<u>November</u>		<u>December</u>		<u>January</u>		<u>February</u>		<u>March</u>		<u>Daily Total</u>	<u>Term Total</u>
<u>Contract Date</u>	<u>Daily Volume</u>	<u>Contract Date</u>	<u>Daily Volume</u>	<u>Contract Date</u>	<u>Daily Volume</u>	<u>Contract Date</u>	<u>Daily Volume</u>	<u>Contract Date</u>	<u>Daily Volume</u>		
N/A		N/A		N/A		N/A		N/A			

Premium - Gas Daily Peaker (Monthly Cost)

<u>November</u>		<u>December</u>		<u>January</u>		<u>February</u>		<u>March</u>		<u>Total</u>	
<u>Option Premium</u>	<u>Premium Cost</u>	<u>Option Premium</u>	<u>Premium Cost</u>	<u>Option Premium</u>	<u>Premium Cost</u>	<u>Option Premium</u>	<u>Premium Cost</u>	<u>Option Premium</u>	<u>Premium Cost</u>	<u>Option Premium</u>	<u>Premium Cost</u>
N/A		N/A		N/A		N/A		N/A			

Units - Futures (Dth)

	<u>November</u>		<u>December</u>		<u>January</u>		<u>February</u>		<u>March</u>		<u>Term Total</u>
	<u>Contract Date</u>	<u>Daily Volume</u>	<u>Contract Date</u>	<u>Daily Volume</u>	<u>Contract Date</u>	<u>Daily Volume</u>	<u>Contract Date</u>	<u>Daily Volume</u>	<u>Contract Date</u>	<u>Daily Volume</u>	
1	05/02/19	1,688	05/14/19	2,667	05/16/19	2,998	05/07/19	2,700	05/09/19	2,129	367,931
2	06/04/19	1,688	06/13/19	2,401	06/18/19	2,725	06/06/19	2,700	06/11/19	1,863	342,845
3	07/02/19	1,688	07/16/19	2,401	07/18/19	1,090	07/09/19	2,400	07/11/19	1,863	284,310
4	08/01/19	1,406	08/20/19	2,134	07/18/19	1,635	08/06/19	2,400	08/08/19	1,597	275,948
5	09/05/19	563	09/17/19	2,134	08/22/19	2,453	09/10/19	2,400	09/12/19	1,597	275,948
6	09/05/19	844	10/17/19	2,134	09/19/19	273	10/10/19	2,400	10/15/19	1,597	217,414
7	10/08/19	1,125			09/19/19	2,180					100,345
8					10/22/19	1,363					41,810
9					10/22/19	1,090					33,448
Total		9,000		13,871		15,806		15,000		10,645	1,940,000

Units - Call Options (Dth)

	<u>November</u>		<u>December</u>		<u>January</u>		<u>February</u>		<u>March</u>		<u>Term Total</u>
	<u>Contract Date</u>	<u>Daily Volume</u>	<u>Contract Date</u>	<u>Daily Volume</u>	<u>Contract Date</u>	<u>Daily Volume</u>	<u>Contract Date</u>	<u>Daily Volume</u>	<u>Contract Date</u>	<u>Daily Volume</u>	
1	05/02/19	3,046	05/09/19	4,801	05/07/19	2,972	05/14/19	5,357	05/16/19	3,726	597,868
2	06/04/19	3,046	06/11/19	4,801	05/16/19	2,702	06/13/19	5,060	06/18/19	3,726	581,158
3	07/02/19	3,046	07/11/19	4,535	06/06/19	5,404	07/16/19	5,060	07/18/19	3,460	648,400
4	08/01/19	3,046	08/08/19	4,535	07/09/19	5,134	08/20/19	5,060	08/22/19	3,460	640,024
5	09/05/19	3,046	09/12/19	4,535	08/06/19	5,134	09/17/19	5,060	09/19/19	3,460	640,024
6	10/08/19	2,769	10/15/19	4,535	09/10/19	5,134	10/17/19	4,762	10/22/19	3,460	623,382
7					10/10/19	5,134					159,145
8											
Total		18,000		27,742		31,613		30,357		21,290	3,890,000

Premium - Call Option (Monthly Cost)

	<u>November</u>		<u>December</u>		<u>January</u>		<u>February</u>		<u>March</u>		<u>Total</u>	
	<u>Option Premium</u>	<u>Premium Cost</u>	<u>Option Premium</u>	<u>Premium Cost</u>	<u>Option Premium</u>	<u>Premium Cost</u>	<u>Option Premium</u>	<u>Premium Cost</u>	<u>Option Premium</u>	<u>Premium Cost</u>	<u>Option Premium</u>	<u>Premium Cost</u>
1	\$ 0.0980	\$ 8,956	\$ 0.0990	\$ 14,736	\$ 0.1000	\$ 9,214	\$ 0.1000	\$ 15,000	\$ 0.1000	\$ 11,550	\$ 0.0994	\$ 59,455
2	\$ 0.0930	\$ 8,499	\$ 0.0980	\$ 14,587	\$ 0.1000	\$ 8,376	\$ 0.1000	\$ 14,167	\$ 0.1000	\$ 11,550	\$ 0.0984	\$ 57,178
3	\$ 0.0950	\$ 8,682	\$ 0.1000	\$ 14,058	\$ 0.0950	\$ 15,915	\$ 0.1000	\$ 14,167	\$ 0.1000	\$ 10,725	\$ 0.0980	\$ 63,545
4	\$ 0.0960	\$ 8,773	\$ 0.1000	\$ 14,058	\$ 0.1000	\$ 15,915	\$ 0.1000	\$ 14,167	\$ 0.1000	\$ 10,725	\$ 0.0994	\$ 63,637
5	\$ 0.0990	\$ 9,047	\$ 0.1000	\$ 14,058	\$ 0.1000	\$ 15,915	\$ 0.1000	\$ 14,167	\$ 0.1000	\$ 10,725	\$ 0.0999	\$ 63,911
6	\$ 0.0900	\$ 7,477	\$ 0.0960	\$ 13,495	\$ 0.1000	\$ 15,915	\$ 0.1000	\$ 13,333	\$ 0.1000	\$ 10,725	\$ 0.0978	\$ 60,945
7	\$ -	\$ -	\$ -	\$ -	\$ 0.0980	\$ 15,596	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 15,596
8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ 0.0952	\$ 51,433	\$ 0.0988	\$ 84,991	\$ 0.0988	\$ 96,844	\$ 0.1000	\$ 85,000	\$ 0.1000	\$ 66,000	\$ 0.0988	\$ 384,268

Units - Collar Floor (put)

No Puts were purchased.

Minnesota Energy Resources Corporation
 2019-2020 Demand Entitlement
 MERC-NNG
 November 1, 2019

Call Options													3,890,000	19.89%
Costing Collar													0	0.00%
Storage													6,062,969	31.00%
Prepaid Obl													0	0.00%
Term Index													0	0.00%
Month/Daily													7,663,489	39.19%
Total													19,556,458	100.00%

MINNESOTA ENERGY RESOURCES

NNG WINTER PLAN

NOVEMBER 2019 THROUGH MARCH 2020

<u>PHYSICAL FIXED PRICE HEDGES</u>	<u>Deal #</u>	<u>Trigger Locked</u>	<u>Trigger Exercised</u>	<u>Receipt Point</u>	<u>Nov</u>	<u>Dec</u>	<u>Daily Volumes</u>			<u>Monthly Total</u>
							<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	
No Physical Fixed Price Hedges										-
Total Actual Fixed/Option Physical					-	-	-	-	-	-

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<u>Contract Number</u>	<u>Date</u>	<u>Receipt Point</u>	<u>Nov</u>	<u>Dec</u>	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Total</u>
77624	4/23/2019	NNG/GLGT Carlton	15,000	15,000	15,000	15,000	15,000	2,265,000
77626	4/23/2019	NNG/GLGT Grand Rapid	6,064	6,064	6,064	6,064	6,064	915,664
77627	4/23/2019	NNG-NBPL/NNG Ventura	5,000	5,000	5,000	5,000	5,000	755,000
77629	4/23/2019	NNG-NBPL/NNG Ventura		20,000	20,000	20,000		1,800,000
77633	4/23/2019	NNG-Field/Demarc	10,000	10,000	10,000	10,000	10,000	1,510,000
77637	4/23/2019	NNG-Field/Demarc	10,000	10,000	10,000	10,000	10,000	1,510,000
77634	4/23/2019	NNG-Field/Demarc	10,000	10,000	10,000	10,000	10,000	1,510,000
77635	4/23/2019	NNG-Field/Demarc	10,000	10,000	10,000	10,000	10,000	1,510,000
Total Actual Seasonal Index			66,064	86,064	86,064	86,064	66,064	11,775,664

GAS DAILY PACKAGES

Physical Call Option	75217	2/25/2019	NNG Ventura	40,000	40,000	40,000	40,000	40,000
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STORAGE

<u>Injection Month</u>	<u>K#118657 Volume Injected</u>	<u>K#132024 Volume Injected</u>	<u>K#133736 Volume Injected</u>	<u>Total Volume Injected</u>
May - balance forward	0	0	0	0
June	984,181	98,039	196,078	1,278,298
July	1,016,987	101,307	202,614	1,320,908
August	1,016,987	101,307	202,614	1,320,908
Sept	984,181	98,039	196,078	1,278,298
Oct (est)	<u>1,016,987</u>	<u>101,307</u>	<u>202,614</u>	<u>1,320,908</u>
Total	5,019,321	500,000	1,000,000	6,519,321

MINNESOTA ENERGY RESOURCES - NNG

	2015-2016 NNG GS	2016-2017 NNG GS	2017-2018 NNG GS	2018-2019 NNG GS	2019-2020 NNG GS	Proposed Change
Design Day	259,076	262,324	267,783	273,842	277,376	3,534
Customer Requirements moving to Transportation						
Adjusted Design Day						
Design Day Percentages	32.40%	29.71%	30.43%	28.70%	25.04%	-3.66%
Total Design Day Capacity (includes non-recallable capacity)	266,317	266,317	266,317	277,256	314,349	37,093
Less: Windom	2,500	2,500	2,500	2,500	2,500	0
Less: Northwestern Energy	1,035	1,035	1,035	1,035	1,035	0
Total Design Day Capacity NNG Pipeline	262,782	262,782	262,782	273,721	310,814	37,093
Factors for All Winter Capacity	100.00%	100.00%	100.00%	100.00%	100.00%	
<u>Direct Assigned Entitlements in PGA</u>						
TF12B	48,183	48,183	54,419	51,706	51,780	74
TF12V	36,526	36,526	30,290	33,003	32,929	(74)
TF5	36,275	36,275	36,275	36,275	36,275	0
TFX12	32,297	32,297	32,297	48,236	85,329	37,093
TFX(5)	109,501	109,501	109,501	104,501	104,501	0
TFX(5) (12-V)						0
TFX (April Only)	2,000	2,000	2,000	2,000	2,000	0
TFX (October Only)	2,000	2,000	2,000	2,000	2,000	0
Windom	2,500	2,500	2,500	2,500	2,500	0
Northwestern Energy	1,035	1,035	1,035	1,035	1,035	0
NNG Zone Delivery Call Option	0	0	0	0	0	0
Bison *	50,000	50,000	50,000	50,000	50,000	0
NBPL *	50,000	50,000	50,000	50,000	50,000	0
Total Direct Assignments	266,317	266,317	266,317	277,256	314,349	37,093
LP Peak Shaving						0
Total Design Day Capacity	266,317	266,317	266,317	277,256	314,349	37,093
Total Annual Transportation	120,541	120,541	120,541	136,480	173,573	37,093
Total Seasonal Transportation	145,776	145,776	145,776	140,776	140,776	0
Total Percent Seasonal	54.7%	54.7%	54.7%	50.8%	44.8%	-6.0%
Reserve Margin	2.79%	1.52%	-0.55%	1.25%	13.33%	12.1%
Total Design Day Capacity w/ contract demand	266,317	266,317	266,317	277,256	314,349	37,093
Factors	32.40%	29.71%	30.43%	28.70%	25.04%	-3.66%
<u>Other Entitlements not included in Peak Day Deliverability</u>						
TFX Oct	2,000	2,000	2,000	2,000	2,000	0
TFX Apr	2,000	2,000	2,000	2,000	2,000	0
FDD Storage Reservation	100,934	107,871	113,075	113,075	113,075	0
FDD Storage Capacity	1,163,864	1,163,864	1,303,864	1,303,864	1,303,864	0
FDD Maximum Storage Quantity	5,819,321	6,219,321	6,519,321	6,519,321	6,519,321	0
SMS	24,380	24,380	22,680	22,680	22,680	0

MINNESOTA ENERGY RESOURCES - NNG

Change in Costs due to November 1, 2019 Change in Entitlement Levels and Related Demand Costs

Costs Assigned In Demand

Contract	2018/19 Entitlements	2019/20 Entitlements	Entitlement Change	Months	2019/20 Rate	2018/19 Total Annual Cost	2019/20 Total Annual Cost	Total Annual Cost Change	
TF12B (Max Rate) Winter	112495	46,506	46,580	74	5	\$10.2300	\$2,378,782	\$2,382,567	\$3,785
TF12B (Max Rate) Summer	112495	46,506	46,580	74	7	\$5.6830	\$1,850,055	\$1,852,999	\$2,944
TF12V (Max Rate)	112495	33,003	32,929	(74)	12	\$9.0926	\$3,600,997	\$3,592,923	(\$8,074)
TF5 (Max Rate)	112495	36,275	36,275	0	5	\$15.1530	\$2,748,375	\$2,748,375	\$0
TF12B (Discount-Winter)	112495	5,200	5,200	0	12	\$7.4951	\$467,694	\$467,694	\$0
TFX12 (Max Rate)	112486	16,261	10,822	(5,439)	12	\$9.6288	\$1,878,887	\$1,250,434	(\$628,453)
TFX Apr (Max Rate)	112486	2,000	2,000	0	1	\$5.6830	\$11,366	\$11,366	\$0
TFX Oct (Max Rate)	112486	2,000	2,000	0	1	\$5.6830	\$11,366	\$11,366	\$0
TFX5 (Max Rate)	112486	77,688	77,688	0	5	\$15.1530	\$5,886,031	\$5,886,031	\$0
TFX5 (Discount)	112486	1,800	1,800	0	5	\$10.0320	\$90,288	\$90,288	\$0
TFX12 (Discount)	111866	1,283	1,283	0	12	\$4.8640	\$74,886	\$74,886	\$0
TFX12 (Discount)	111866	8,271	8,271	0	12	\$5.4720	\$543,107	\$543,107	\$0
TFX12 (Discount)	111866	11,921	11,921	0	12	\$7.6025	\$1,087,553	\$1,087,553	\$0
TFX5 (Discount)	111866	379	379	0	5	\$4.8640	\$9,217	\$9,217	\$0
TFX5 (Discount)	111866	2,445	2,445	0	5	\$5.4720	\$66,895	\$66,895	\$0
TFX5 (Discount)	111866	22,189	22,189	0	5	\$15.1392	\$1,679,619	\$1,679,619	\$0
Windom		2,500	2,500	0	12	\$0.0000	\$0	\$0	\$0
Northwestern Energy		1,035	1,035	0	12	\$8.3382	\$103,560	\$103,560	\$0

Total Demand Cost

\$22,488,679	\$21,858,881	(\$629,798)
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Costs Assigned In Commodity

	2018/19 Entitlements	2019/20 Entitlement	Entitlement Change	Months	2019/20 Rate/Dth	2018/19 Total Annual Cost	Entitlement Total Cost	Entitlement Change
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Upstream

Surcharges:

Storage (FDD)

FDD - Reservation	118657	81,508	81,508	0	12	\$ 1.7140	\$1,676,457	\$1,676,457	\$0
FDD - Storage Cycle	118657	939,864	939,864	0	5	\$ 0.3567	\$1,676,248	\$1,676,248	\$0
FDD - Reservation	118657	5,550	5,550	0	12	\$ 3.3157	\$220,826	\$220,826	\$0
FDD - Storage Cycle	118657	64,000	64,000	0	5	\$ 0.6901	\$220,832	\$220,832	\$0
FDD - Reservation	133736	17,345	17,345	0	12	\$ 1.7140	\$356,752	\$356,752	\$0
FDD - Storage Cycle	133736	200,000	200,000	0	5	\$ 0.3567	\$356,700	\$356,700	\$0
FDD - Reservation	132024	8,672	8,672	0	12	\$ 1.7140	\$178,366	\$178,366	\$0
FDD - Storage Cycle	132024	100,000	100,000	0	5	\$ 0.3567	\$178,350	\$178,350	\$0

Pipeline

Bison	FT0003	50,000	50,000	0	12	\$17.4896	\$10,493,750	\$10,493,750	\$0
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Minnesota Energy Resources Corporation
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NBPL	T8673F	50,000	50,000	0	12	\$6.3905	\$3,834,300	\$3,834,300	\$0
TFX12 (Rochester)	112486	10,500	10,500	0	12	\$37.1175	\$4,676,805	\$4,676,805	\$0
TFX12 (Rochester II)	112486	0	34,500	34,500	12	\$10.7714	\$0	\$4,459,360	\$4,459,360
TFX12 (SE MN Expansion)	112486	0	8,032	8,032	12	\$9.6288	\$0	\$928,062	\$928,062
SMS-Bal Service		272,160	272,160	0	1	\$2.1800	\$593,309	\$593,309	\$0
Physical Forward Start Premium							\$128,700	\$0	(\$128,700)
Financial Call Option Premium							\$378,446	\$384,268	\$5,822
Total Commodity Costs							\$24,969,839	\$30,234,383	\$5,264,544

Attachment 9

MINNESOTA ENERGY RESOURCES - NNG

Daily Total Throughput Data - July 1, 2018 through June 30, 2019
 NNG

Design Day:

Base	6,734
Variable	2,641

Date	13.98% Cloquet Adjusted HDD	29.22% Minneapolis Adjusted HDD	45.15% Rochester Adjusted HDD	11.65% Worthington Adjusted HDD	100.00% Weighted Adjusted HDD	Actual Total Through- Put *	Estimated Firm Through- Put **
7/1/18	4	0	0	0	1	153,400	8,137
7/2/18	0	0	0	0	0	158,144	6,734
7/3/18	0	0	0	0	0	158,076	6,734
7/4/18	0	0	0	0	0	148,516	6,734
7/5/18	2	0	0	0	0	164,949	7,325
7/6/18	0	0	0	0	0	148,088	6,734
7/7/18	0	0	0	0	0	133,834	6,734
7/8/18	0	0	0	0	0	139,828	6,734
7/9/18	0	0	0	0	0	171,141	6,734
7/10/18	0	0	0	0	0	163,202	6,734
7/11/18	0	0	0	0	0	160,018	6,734
7/12/18	0	0	0	0	0	173,884	6,734
7/13/18	0	0	0	0	0	171,112	6,734
7/14/18	0	0	0	0	0	156,175	6,734
7/15/18	0	0	0	0	0	163,632	6,734
7/16/18	1	0	0	0	0	175,846	6,919
7/17/18	4	0	0	0	1	180,515	8,063
7/18/18	0	0	0	0	0	162,721	6,734
7/19/18	0	0	0	0	0	140,340	6,734
7/20/18	0	0	0	0	0	162,793	6,734
7/21/18	0	0	0	0	0	137,855	6,734
7/22/18	3	0	0	0	0	153,671	7,879
7/23/18	0	0	0	0	0	167,603	6,734
7/24/18	0	0	0	0	0	167,423	6,734
7/25/18	0	0	0	0	0	153,685	6,734
7/26/18	11	1	4	4	4	149,506	17,785
7/27/18	3	0	2	3	1	161,048	10,586
7/28/18	0	0	0	1	0	151,485	6,888
7/29/18	0	0	0	0	0	159,328	6,734
7/30/18	0	0	0	0	0	172,497	6,734
7/31/18	0	0	0	0	0	171,944	6,734
8/1/18	7	0	0	6	2	166,210	11,275
8/2/18	8	0	3	0	3	158,142	13,540
8/3/18	3	0	0	0	0	149,225	7,731

Minnesota Energy Resources Corporation
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8/4/18	0	0	0	0	0	125,345	6,734
8/5/18	0	0	0	0	0	157,562	6,734
8/6/18	4	0	0	0	1	159,528	8,100
8/7/18	0	0	2	0	1	155,864	8,642
8/8/18	0	0	0	0	0	161,897	6,734
8/9/18	0	0	0	0	0	172,733	6,734
8/10/18	0	0	0	0	0	171,416	6,734
8/11/18	0	0	0	0	0	141,454	6,734
8/12/18	0	0	0	0	0	149,350	6,734
8/13/18	0	0	0	0	0	169,570	6,734
8/14/18	0	0	0	0	0	168,995	6,734
8/15/18	0	0	0	0	0	163,580	6,734
8/16/18	0	0	0	0	0	159,430	6,734
8/17/18	0	0	0	0	0	140,654	6,734
8/18/18	0	0	0	0	0	131,844	6,734
8/19/18	0	0	0	0	0	126,654	6,734
8/20/18	4	0	0	1	1	117,218	8,285
8/21/18	5	0	6	6	4	120,334	17,095
8/22/18	0	0	1	1	0	124,750	7,484
8/23/18	0	0	0	0	0	120,825	6,734
8/24/18	2	0	0	0	0	119,054	7,288
8/25/18	0	0	0	0	0	117,009	6,734
8/26/18	0	0	0	0	0	120,798	6,734
8/27/18	0	0	0	0	0	149,400	6,734
8/28/18	14	6	5	11	7	153,458	25,724
8/29/18	7	2	6	2	4	165,918	18,538
8/30/18	2	0	0	0	0	149,920	7,325
8/31/18	0	0	0	0	0	145,179	6,734
9/1/18	0	0	0	0	0	147,511	6,734
9/2/18	5	0	0	0	1	151,612	8,506
9/3/18	0	0	0	0	0	157,083	6,734
9/4/18	2	0	0	0	0	170,990	7,325
9/5/18	14	3	6	6	6	150,371	22,965
9/6/18	6	0	3	3	3	151,201	13,602
9/7/18	3	0	5	5	3	141,113	15,167
9/8/18	10	1	7	4	5	131,142	20,763
9/9/18	8	2	7	3	5	133,876	19,682
9/10/18	2	0	0	0	0	145,363	7,325
9/11/18	0	0	0	0	0	136,431	6,734
9/12/18	0	0	0	0	0	155,159	6,734
9/13/18	0	0	0	0	0	150,375	6,734
9/14/18	0	0	0	0	0	178,434	6,734
9/15/18	2	0	0	0	0	163,707	7,325
9/16/18	0	0	0	0	0	156,297	6,734
9/17/18	8	0	0	0	1	170,441	9,651
9/18/18	13	2	1	0	3	158,796	13,787
9/19/18	12	4	1	3	4	156,282	16,313

Minnesota Energy Resources Corporation
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9/20/18	14	7	1	6	5	140,431	19,795
9/21/18	20	14	19	19	18	152,727	53,732
9/22/18	12	7	9	8	9	146,019	29,926
9/23/18	17	0	3	0	4	150,723	16,946
9/24/18	9	1	0	7	2	174,982	12,661
9/25/18	23	16	16	19	17	181,293	52,801
9/26/18	17	12	12	12	13	165,266	40,535
9/27/18	20	14	14	13	15	178,862	45,474
9/28/18	27	20	22	23	22	197,581	65,679
9/29/18	27	22	24	24	24	193,654	69,564
9/30/18	20	17	18	19	18	191,010	54,700
10/1/18	21	18	18	20	19	215,849	56,583
10/2/18	17	12	8	9	11	196,543	34,732
10/3/18	25	9	8	9	11	189,233	35,653
10/4/18	26	23	25	28	25	242,916	72,425
10/5/18	26	19	18	23	20	231,208	59,110
10/6/18	26	22	22	27	23	219,061	67,666
10/7/18	24	18	19	22	20	209,262	59,161
10/8/18	21	15	11	20	14	206,163	44,426
10/9/18	27	21	8	27	16	200,225	50,049
10/10/18	34	25	19	35	25	195,059	72,382
10/11/18	38	34	37	38	36	247,580	101,843
10/12/18	35	28	32	32	31	237,664	88,970
10/13/18	28	22	25	27	25	201,892	71,525
10/14/18	35	34	38	41	37	235,642	103,362
10/15/18	33	29	32	35	31	223,628	89,440
10/16/18	33	22	22	24	24	215,920	69,794
10/17/18	34	25	29	24	28	235,980	80,734
10/18/18	16	10	14	9	13	180,389	40,345
10/19/18	25	18	17	18	19	189,195	55,810
10/20/18	37	32	38	35	36	232,712	100,496
10/21/18	28	20	25	20	23	228,967	68,174
10/22/18	25	21	22	22	22	239,265	64,886
10/23/18	32	26	29	26	28	255,662	81,245
10/24/18	25	22	26	22	24	228,311	70,675
10/25/18	23	16	21	20	20	240,190	58,921
10/26/18	22	19	20	20	20	236,052	60,349
10/27/18	23	18	20	18	20	210,005	58,705
10/28/18	24	21	26	24	24	216,710	69,650
10/29/18	27	21	23	20	23	231,441	66,353
10/30/18	26	21	24	24	23	241,995	68,454
10/31/18	32	22	24	26	25	261,678	72,794
11/1/18	32	24	24	21	25	259,503	72,522
11/2/18	35	26	26	25	27	250,503	78,714
11/3/18	32	26	30	29	29	231,641	82,551
11/4/18	32	30	31	31	31	222,338	88,497
11/5/18	30	25	27	31	27	218,263	78,668

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11/6/18	36	36	38	45	38	252,510	106,765
11/7/18	45	41	45	44	44	301,805	122,291
11/8/18	50	45	47	48	47	310,964	130,454
11/9/18	57	54	60	61	58	314,251	160,323
11/10/18	50	47	51	50	49	296,241	137,253
11/11/18	48	46	48	49	48	293,168	132,220
11/12/18	61	56	59	59	59	343,331	161,590
11/13/18	56	51	54	44	52	334,091	144,672
11/14/18	43	36	38	33	38	271,211	106,274
11/15/18	38	32	36	32	35	262,956	97,942
11/16/18	49	42	45	49	45	276,845	125,140
11/17/18	56	52	61	63	58	303,840	158,675
11/18/18	49	50	57	48	53	286,536	146,330
11/19/18	64	49	50	59	53	308,512	146,036
11/20/18	53	46	47	39	47	290,213	129,870
11/21/18	54	44	45	41	45	290,236	126,845
11/22/18	41	34	38	31	37	246,100	103,350
11/23/18	27	26	30	31	29	220,962	82,030
11/24/18	43	39	41	46	41	248,276	116,282
11/25/18	55	49	53	61	53	295,228	146,876
11/26/18	57	52	58	60	57	331,376	155,965
11/27/18	54	49	53	50	51	309,689	142,665
11/28/18	49	46	48	46	47	299,943	131,876
11/29/18	40	38	40	38	40	268,045	111,059
11/30/18	38	39	40	41	39	249,534	110,595
12/1/18	42	40	43	47	43	251,979	119,008
12/2/18	45	41	43	49	44	255,625	122,022
12/3/18	50	43	45	48	45	275,526	126,691
12/4/18	47	43	48	50	47	284,179	130,765
12/5/18	48	45	55	48	50	289,196	139,602
12/6/18	61	56	64	60	61	328,173	167,016
12/7/18	55	49	53	54	52	316,406	144,194
12/8/18	52	48	54	56	52	297,888	143,991
12/9/18	46	46	53	49	50	299,666	138,053
12/10/18	51	49	56	52	53	320,705	146,251
12/11/18	49	47	51	47	49	294,211	136,617
12/12/18	40	41	46	39	43	284,266	119,894
12/13/18	44	39	43	39	42	283,664	116,973
12/14/18	33	37	45	38	40	273,310	112,501
12/15/18	33	35	41	35	37	248,925	104,858
12/16/18	40	33	41	36	38	260,081	107,586
12/17/18	44	36	43	40	41	276,873	113,998
12/18/18	36	29	34	32	32	251,991	92,460
12/19/18	34	29	34	34	33	243,553	92,884
12/20/18	46	40	42	46	43	281,350	119,185
12/21/18	51	43	45	44	45	290,594	126,504
12/22/18	43	39	42	39	41	275,245	114,948

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12/23/18	51	49	53	47	51	297,745	141,310
12/24/18	47	46	49	43	47	286,381	131,455
12/25/18	48	41	37	41	40	270,744	113,378
12/26/18	48	39	40	40	41	270,282	114,846
12/27/18	46	40	37	57	41	261,656	115,891
12/28/18	69	55	53	75	58	322,582	159,957
12/29/18	62	54	59	65	59	321,861	161,728
12/30/18	46	41	45	43	44	277,534	122,609
12/31/18	67	58	56	69	60	325,221	164,037
1/1/19	71	62	61	71	64	355,996	175,941
1/2/19	59	48	52	53	52	319,871	144,433
1/3/19	38	34	39	40	38	266,750	105,908
1/4/19	35	29	33	34	32	250,493	90,877
1/5/19	45	32	33	33	34	247,984	97,412
1/6/19	43	35	37	38	37	254,275	105,723
1/7/19	39	32	33	34	34	255,268	95,470
1/8/19	63	56	58	57	58	328,658	160,048
1/9/19	64	59	61	60	60	347,021	166,448
1/10/19	56	50	51	49	51	318,560	142,379
1/11/19	47	41	43	42	43	284,272	119,317
1/12/19	41	41	40	45	41	263,909	114,997
1/13/19	40	36	42	40	39	258,072	110,937
1/14/19	49	38	41	42	42	273,382	116,429
1/15/19	62	51	51	59	53	292,619	147,534
1/16/19	66	52	50	57	54	309,610	149,137
1/17/19	68	52	54	53	55	324,526	152,442
1/18/19	77	67	67	76	70	352,251	190,722
1/19/19	78	68	73	78	73	355,126	198,791
1/20/19	72	66	76	77	73	360,210	198,350
1/21/19	64	63	70	64	66	343,064	181,487
1/22/19	57	53	54	61	55	317,462	151,774
1/23/19	56	54	58	60	56	312,169	155,950
1/24/19	80	76	79	81	79	386,669	214,289
1/25/19	85	69	75	70	74	386,851	201,496
1/26/19	83	68	76	67	74	374,718	201,055
1/27/19	82	75	79	69	77	356,533	210,415
1/28/19	75	71	76	83	75	374,200	205,422
1/29/19	104	97	101	101	100	457,369	271,362
1/30/19	97	91	98	87	95	460,432	256,547
1/31/19	84	79	86	74	82	418,104	223,527
2/1/19	64	60	58	53	59	331,114	161,282
2/2/19	52	39	33	36	38	252,666	106,655
2/3/19	47	36	37	61	41	252,543	114,794
2/4/19	67	60	65	77	65	355,190	178,514
2/5/19	64	60	58	71	61	353,481	166,728
2/6/19	54	50	50	71	53	327,786	147,393
2/7/19	72	71	79	89	77	390,426	209,322

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2/8/19	80	76	82	76	79	422,899	215,856
2/9/19	70	70	69	66	69	359,416	188,867
2/10/19	57	53	51	57	53	323,142	146,505
2/11/19	53	47	49	50	49	306,749	136,499
2/12/19	54	58	65	69	62	322,722	169,546
2/13/19	51	56	59	55	57	311,217	156,245
2/14/19	65	63	67	75	67	348,594	182,398
2/15/19	65	62	72	67	67	357,510	184,055
2/16/19	59	57	59	60	58	318,766	161,211
2/17/19	61	55	59	63	59	317,168	161,342
2/18/19	63	59	65	63	63	342,784	172,646
2/19/19	58	58	61	61	59	322,635	163,632
2/20/19	50	52	57	59	54	321,122	150,575
2/21/19	48	54	60	56	56	320,890	154,099
2/22/19	50	48	51	48	50	281,021	137,704
2/23/19	45	48	51	58	50	279,237	139,515
2/24/19	76	70	77	76	75	356,657	204,108
2/25/19	75	70	73	78	73	380,832	199,567
2/26/19	66	65	68	71	67	367,962	184,108
2/27/19	68	64	73	68	69	359,100	188,301
2/28/19	59	56	62	57	59	349,952	163,041
3/1/19	60	56	56	62	57	340,221	158,183
3/2/19	74	69	74	78	73	333,993	200,281
3/3/19	79	78	85	86	82	398,930	224,421
3/4/19	72	70	79	75	75	368,821	204,150
3/5/19	68	60	69	65	66	348,018	181,259
3/6/19	66	56	63	57	60	328,845	166,510
3/7/19	56	53	57	58	56	314,821	153,539
3/8/19	43	42	46	45	44	268,161	123,069
3/9/19	37	39	42	48	41	253,528	115,232
3/10/19	54	50	55	49	53	295,608	145,516
3/11/19	49	46	50	42	48	283,326	132,490
3/12/19	38	38	39	34	38	255,626	106,430
3/13/19	31	29	31	32	31	235,734	87,573
3/14/19	36	35	36	48	37	252,087	104,556
3/15/19	44	43	47	44	45	265,619	125,557
3/16/19	44	39	43	39	41	254,429	116,208
3/17/19	39	35	42	39	39	254,185	109,661
3/18/19	36	33	39	35	36	241,037	102,739
3/19/19	32	28	33	32	31	221,366	89,579
3/20/19	33	28	34	35	32	229,892	91,745
3/21/19	26	28	32	31	30	215,284	85,284
3/22/19	37	28	32	29	31	222,735	88,205
3/23/19	26	23	27	23	25	204,061	73,416
3/24/19	47	27	28	30	31	235,472	87,767
3/25/19	37	30	31	35	32	281,136	91,143
3/26/19	31	27	29	28	28	228,766	81,251

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3/27/19	23	18	20	19	19	204,832	58,213
3/28/19	37	27	29	31	30	233,742	85,311
3/29/19	38	30	31	37	32	233,145	91,263
3/30/19	45	40	44	46	43	261,142	121,176
3/31/19	39	36	37	31	36	260,942	102,749
4/1/19	33	30	35	37	33	264,240	95,151
4/2/19	34	28	31	30	30	255,779	87,200
4/3/19	35	25	24	26	26	234,423	75,306
4/4/19	33	28	30	28	29	263,076	84,448
4/5/19	26	22	22	15	22	229,714	64,784
4/6/19	28	16	10	11	14	202,616	43,626
4/7/19	25	13	16	12	16	215,405	49,448
4/8/19	22	12	15	15	15	211,660	46,789
4/9/19	37	25	22	25	26	238,943	74,206
4/10/19	42	41	43	45	42	278,755	118,219
4/11/19	45	39	39	39	40	293,445	111,906
4/12/19	36	36	41	44	39	281,809	109,739
4/13/19	41	35	37	39	37	270,967	104,438
4/14/19	35	28	34	32	32	249,271	91,772
4/15/19	30	21	22	16	22	226,072	64,258
4/16/19	15	8	10	13	10	199,744	33,946
4/17/19	26	21	22	23	22	226,785	65,775
4/18/19	27	23	26	26	25	232,025	73,142
4/19/19	15	12	18	15	15	200,851	47,343
4/20/19	7	0	4	0	3	156,715	13,904
4/21/19	24	5	0	4	5	175,233	20,681
4/22/19	30	26	19	29	24	229,375	69,280
4/23/19	16	11	15	11	13	218,283	41,999
4/24/19	7	1	7	2	4	206,370	18,373
4/25/19	13	9	14	14	12	192,551	39,326
4/26/19	26	16	20	24	20	201,936	59,833
4/27/19	28	23	36	32	31	206,933	87,538
4/28/19	24	20	25	29	24	198,946	69,843
4/29/19	33	19	18	22	21	221,271	61,502
4/30/19	32	26	27	27	28	242,173	79,425
5/1/19	32	23	24	25	25	237,765	71,727
5/2/19	29	20	23	21	23	224,324	66,928
5/3/19	20	12	18	13	16	190,401	49,274
5/4/19	11	6	12	10	10	163,052	32,048
5/5/19	23	11	11	14	13	166,216	40,641
5/6/19	26	18	14	21	18	188,393	53,649
5/7/19	20	10	16	15	14	175,112	44,987
5/8/19	28	27	30	34	29	207,135	84,132
5/9/19	26	22	27	28	25	204,294	73,935
5/10/19	18	15	17	17	16	172,896	49,943
5/11/19	15	13	20	15	17	176,586	50,369
5/12/19	17	12	18	20	16	185,616	50,130

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5/13/19	10	8	12	8	10	179,474	33,661
5/14/19	9	2	10	3	7	171,925	24,493
5/15/19	15	0	0	0	2	170,844	12,383
5/16/19	16	0	0	1	2	176,917	12,937
5/17/19	21	9	16	10	14	164,937	43,594
5/18/19	30	20	12	8	16	185,020	50,258
5/19/19	29	27	28	29	28	197,791	80,065
5/20/19	16	11	16	16	14	174,944	44,448
5/21/19	14	13	20	22	17	180,847	52,666
5/22/19	19	9	9	16	11	165,968	35,339
5/23/19	15	11	11	12	11	174,858	37,085
5/24/19	18	3	3	4	5	157,083	20,598
5/25/19	15	8	6	10	8	147,969	28,432
5/26/19	7	1	1	0	2	144,829	10,723
5/27/19	25	17	12	14	15	162,699	47,078
5/28/19	11	9	11	12	11	159,503	34,536
5/29/19	3	1	4	9	3	156,552	15,199
5/30/19	13	0	0	0	2	153,773	11,571
5/31/19	5	0	0	0	1	164,921	8,506
6/1/19	12	3	7	8	7	139,924	24,194
6/2/19	11	0	3	0	3	131,335	13,978
6/3/19	11	0	0	0	2	135,863	10,832
6/4/19	3	0	0	0	0	154,587	7,915
6/5/19	16	0	0	0	2	167,706	12,789
6/6/19	1	0	0	0	0	162,555	6,919
6/7/19	5	0	0	0	1	145,438	8,691
6/8/19	0	0	0	0	0	123,688	6,734
6/9/19	9	4	3	7	5	125,139	19,203
6/10/19	11	0	2	0	2	133,259	12,851
6/11/19	8	4	7	7	6	124,180	22,170
6/12/19	16	6	10	12	10	127,058	33,039
6/13/19	5	0	2	0	2	141,037	11,277
6/14/19	5	0	0	0	1	129,782	8,506
6/15/19	11	0	1	0	2	124,614	11,207
6/16/19	12	0	5	0	4	151,076	17,595
6/17/19	8	0	0	0	1	170,279	9,762
6/18/19	9	0	1	3	2	158,521	12,240
6/19/19	3	0	0	0	0	148,600	7,915
6/20/19	3	0	2	0	1	132,385	10,539
6/21/19	9	0	5	1	3	128,159	15,650
6/22/19	8	0	0	0	1	114,613	9,503
6/23/19	9	0	0	4	2	137,224	11,183
6/24/19	3	0	2	0	1	145,120	10,354
6/25/19	0	0	0	0	0	146,448	6,734
6/26/19	0	0	0	0	0	151,542	6,734
6/27/19	1	0	0	0	0	147,691	7,103
6/28/19	0	0	0	0	0	145,318	6,734

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6/29/19	0	0	0	0	0	138,029	6,734
6/30/19	0	0	0	0	0	143,417	6,734
Totals	10,672	8,939	9,707	9,827	9,632	82,744,333	27,895,005

* Volumes include interruptible and transportation volumes

** Design Model numbers are used to calculate firm volumes only

MINNESOTA ENERGY RESOURCES - NNG

Customer Counts by PGAC Class - July 1, 2018 through June 30, 2019

Tariff Rate Class	Rate Designation	Jul-18 Average Customers	Aug-18 Average Customers	Sep-18 Average Customers	Oct-18 Average Customers	Nov-18 Average Customers	Dec-18 Average Customers	Jan-19 Average Customers	Feb-19 Average Customers	Mar-19 Average Customers	Apr-19 Average Customers	May-19 Average Customers	Jun-19 Average Customers	Annual Average Customers
GS- Residential	MERC000001	172,694	172,762	172,921	173,195	173,814	172,550	177,209	174,486	174,348	174,449	175,296	174,922	174,054
GS-C&I <1,500 therms/yr (Small)	MERC000005	7,319	7,310	7,329	7,301	7,284	7,296	7,514	7,235	6,648	6,647	6,692	6,679	7,104
GS-C&I <1,500 therms/yr (Small) Emmons, IA	MERC000013	1	1	1	1	1	1	1	1	1	1	1	1	1
GS-C&I >1,500 therms/yr (Large)	MERC000009	9,128	9,091	9,151	9,119	9,190	9,119	9,490	9,338	9,933	9,951	9,947	9,949	9,450
GS-C&I >1,500 therms/yr (Large) Emmons, IA	MERC000014	2	2	2	2	2	2	2	2	2	2	2	2	2
Small Volume Interruptible (SVI)	MERC000015	259	258	255	246	270	271	269	262	259	260	257	258	260
Small Volume Interruptible w/Joint (SVJ)	MERC000019	2	2	2	2	3	3	2	2	2	2	3	3	2
Large Volume Interruptible (LVI)	MERC000022	58	59	60	58	70	58	67	62	59	62	63	61	61
Large Volume Interruptible w/Joint (LVJ)	MERC000026	8	-1	9	9	-5	-62	0	0	0	0	0	1	-3
	MERC000101	9,398	9,379	9,349	9,333	9,377	9,122	9,674	9,380	9,368	9,395	9,384	9,386	9,379
	MERC000102	584	577	575	571	579	567	581	578	548	555	559	549	569
	MERC000103	586	583	583	590	607	574	606	590	618	623	617	621	600
	MERC000104	32	34	22	35	40	30	34	32	32	31	32	33	32
	MERC000106	14	14	25	16	14	13	13	13	13	12	12	12	14
Total		200,072	200,057	200,258	200,461	201,232	199,530	205,449	201,970	201,818	201,977	202,854	202,465	201,512

MINNESOTA ENERGY RESOURCES - NNG

Projected Storage Cost - November 2019 through March 2020

Month/ Year	K#118657 NNG Storage (Dth)	LS Power K#132024 NNG Storage (Dth)	LS Power K#133736 NNG Storage (Dth)	Total NNG Storage (Dth)	Projected NNG WACOG	K#118657 NNG Storage Cost	K#132024 NNG Storage Cost	K#133736 NNG Storage Cost	Total NNG Storage Cost	ANR Storage GLGT/VGT (Dth)	ANR Storage GLGT/VGT WACOG	ANR Storage GLGT/VGT Cost
Nov-19	489,384	48,750	97,500	635,634	\$ 2.0452	\$ 1,000,875	\$ 99,702	\$ 199,404	\$ 1,299,982	96,000	\$ 2.2000	\$ 211,200
Dec-19	1,229,734	122,500	245,000	1,597,234	\$ 2.0452	\$ 2,515,020	\$ 250,534	\$ 501,068	\$ 3,266,621	189,100	\$ 2.2000	\$ 416,020
Jan-20	1,229,734	122,500	245,000	1,597,234	\$ 2.0452	\$ 2,515,020	\$ 250,534	\$ 501,068	\$ 3,266,621	189,100	\$ 2.2000	\$ 416,020
Feb-20	1,229,734	122,500	245,000	1,597,234	\$ 2.0452	\$ 2,515,020	\$ 250,534	\$ 501,068	\$ 3,266,621	196,000	\$ 2.2000	\$ 431,200
Mar-20	489,384	48,750	97,500	635,634	\$ 2.0452	\$ 1,000,875	\$ 99,702	\$ 199,404	\$ 1,299,982	85,900	\$ 2.2000	\$ 188,980
Total	4,667,969	465,000	930,000	6,062,969		\$ 9,546,809	\$ 951,006	\$ 1,902,012	\$ 12,399,828	756,100		\$ 1,663,420

Month/ Year	NNG Storage Volume (Dth)	NNG Index Price	NNG Index Cost	Month/ Year	ANR Storage Volume (Dth)	Emerson Index Price	Emerson Market Cost
Nov-19	635,634	\$ 2.3245	\$ 1,477,531	Nov-19	96,000	\$ 2.3620	\$ 226,752
Dec-19	1,597,234	\$ 2.9720	\$ 4,746,978	Dec-19	189,100	\$ 2.7670	\$ 523,240
Jan-20	1,597,234	\$ 4.0620	\$ 6,487,963	Jan-20	189,100	\$ 3.0820	\$ 582,806
Feb-20	1,597,234	\$ 4.0140	\$ 6,411,296	Feb-20	196,000	\$ 3.0990	\$ 607,404
Mar-20	635,634	\$ 2.9500	\$ 1,875,120	Mar-20	85,900	\$ 2.7225	\$ 233,863
Total	6,062,969		\$ 20,998,888	Total	756,100		\$ 2,174,065
Storage Savings (Cost):			\$ 8,599,060				\$ 510,645

*Indexes and projected WACOG based on 10/23/19 market prices

MINNESOTA ENERGY RESOURCES - NNG
 Projected Call Option Costs - November 2019 through March 2020

Call/Put Options WACOG

Call/Put Options 10,000 Dth/contract

Nov-19															Dec-19															Jan-20															
Deal Number	Purchase Date	Trade Number	Number Contracts	Physical Volume	Strike Price	Strike Cost	Option Price	Option Cost	Pent Settle*	Pent Settle Cost	Over/(Under) Market	Premium Per Unit	Premium Cost	Total Cost	Deal Number	Purchase Date	Trade Number	Number Contracts	Physical Volume	Strike Price	Strike Cost	Option Price	Option Cost	Pent Settle*	Pent Settle Cost	Over/(Under) Market	Premium Per Unit	Premium Cost	Total Cost	Deal Number	Purchase Date	Trade Number	Number Contracts	Physical Volume	Strike Price	Strike Cost	Option Price	Option Cost	Pent Settle*	Pent Settle Cost	Over/(Under) Market	Premium Per Unit	Premium Cost	Total Cost	
1	05/02/19	77876	11	110,000	\$ 2,9700	\$ 326,700	\$ 2,2820	\$ 251,020	\$ 2,2820	\$ 251,020	\$ -	\$ 0.0980	\$ 10,780	\$ 261,800	1	05/09/19	78018	18	180,000	\$ 3,3000	\$ 594,000	\$ 2,4270	\$ 436,860	\$ 2,4270	\$ 436,860	\$ -	\$ 0.0990	\$ 17,820	\$ 454,680	1	05/07/19	77974	11	110,000	\$ 3,9000	\$ 429,000	\$ 2,5320	\$ 278,520	\$ 2,5320	\$ 278,520	\$ -	\$ 0.1000	\$ 11,000	\$ 289,520	
2	06/04/19	78634	11	110,000	\$ 2,8000	\$ 308,000	\$ 2,2820	\$ 251,020	\$ 2,2820	\$ 251,020	\$ -	\$ 0.0930	\$ 10,230	\$ 261,250	2	06/11/19	78799	18	180,000	\$ 3,3700	\$ 606,600	\$ 2,4270	\$ 436,860	\$ 2,4270	\$ 436,860	\$ -	\$ 0.0980	\$ 17,640	\$ 454,500	2	05/16/19	78169	10	100,000	\$ 4,0500	\$ 405,000	\$ 2,5320	\$ 253,200	\$ 2,5320	\$ 253,200	\$ -	\$ 0.1000	\$ 10,000	\$ 263,200	
3	07/02/19	79219	11	110,000	\$ 2,6300	\$ 289,300	\$ 2,2820	\$ 251,020	\$ 2,2820	\$ 251,020	\$ -	\$ 0.0950	\$ 10,450	\$ 261,470	3	07/11/19	79316	17	170,000	\$ 3,3000	\$ 561,000	\$ 2,4270	\$ 412,590	\$ 2,4270	\$ 412,590	\$ -	\$ 0.1000	\$ 17,000	\$ 429,590	3	06/06/19	78692	20	200,000	\$ 3,8500	\$ 770,000	\$ 2,5320	\$ 506,400	\$ 2,5320	\$ 506,400	\$ -	\$ 0.0950	\$ 19,000	\$ 525,400	
4	08/01/19	79842	11	110,000	\$ 2,6000	\$ 286,000	\$ 2,2820	\$ 251,020	\$ 2,2820	\$ 251,020	\$ -	\$ 0.0960	\$ 10,560	\$ 261,580	4	08/08/19	79938	17	170,000	\$ 2,8000	\$ 476,000	\$ 2,4270	\$ 412,590	\$ 2,4270	\$ 412,590	\$ -	\$ 0.1000	\$ 17,000	\$ 429,590	4	07/09/19	78269	19	190,000	\$ 3,9000	\$ 722,000	\$ 2,5320	\$ 481,080	\$ 2,5320	\$ 481,080	\$ -	\$ 0.1000	\$ 19,000	\$ 500,080	
5	08/05/19	80537	11	110,000	\$ 2,6000	\$ 286,000	\$ 2,2820	\$ 251,020	\$ 2,2820	\$ 251,020	\$ -	\$ 0.0960	\$ 10,890	\$ 261,910	5	09/12/19	80642	17	170,000	\$ 3,1500	\$ 535,500	\$ 2,4270	\$ 412,590	\$ 2,4270	\$ 412,590	\$ -	\$ 0.1000	\$ 17,000	\$ 429,590	5	08/08/19	78916	19	190,000	\$ 3,2500	\$ 617,500	\$ 2,5320	\$ 481,080	\$ 2,5320	\$ 481,080	\$ -	\$ 0.1000	\$ 19,000	\$ 500,080	
6	10/08/19	81056	10	100,000	\$ 2,3000	\$ 230,000	\$ 2,2820	\$ 228,200	\$ 2,2820	\$ 228,200	\$ -	\$ 0.0900	\$ 9,000	\$ 237,200	6	10/15/19	81269	17	170,000	\$ 2,7500	\$ 467,500	\$ 2,4270	\$ 412,590	\$ 2,4270	\$ 412,590	\$ -	\$ 0.0960	\$ 16,320	\$ 428,910	6	09/10/19	80606	19	190,000	\$ 4,1000	\$ 779,000	\$ 2,5320	\$ 481,080	\$ 2,5320	\$ 481,080	\$ -	\$ 0.1000	\$ 19,000	\$ 500,080	
7															7																7	10/10/19	81174	19	190,000	\$ 3,2000	\$ 608,000	\$ 2,5320	\$ 481,080	\$ 2,5320	\$ 481,080	\$ -	\$ 0.0980	\$ 18,620	\$ 499,700
8															8																8														
9															9																9														
10															10																10														
11															11																11														
12															12																12														
13															13																13														
14															14																14														
15															15																15														
Total			65	650,000		\$ 1,726,000		\$ 1,483,300		\$ 1,483,300	\$ -		\$ 61,910	\$ 1,545,210	Total			104	1,040,000		\$ 3,240,600		\$ 2,524,080		\$ 2,524,080	\$ -		\$ 102,780	\$ 2,626,860	Total	Total		117	1,170,000		\$ 4,330,500		\$ 2,962,440		\$ 2,962,440	\$ -		\$ 115,620	\$ 3,078,060	
NNG	54	83.08%	54	540,000	\$ 2,6554	\$ 1,433,908	\$ 2,2820	\$ 1,232,280	\$ 2,2820	\$ 1,232,280	\$ -	\$ 0.0952	\$ 51,433	\$ 1,283,713	NNG	86	82.69%	86	860,000	\$ 3,1160	\$ 2,679,727	\$ 2,4270	\$ 2,087,220	\$ 2,4270	\$ 2,087,220	\$ -	\$ 0.0988	\$ 84,991	\$ 2,172,211	NNG	98	83.76%	98	980,000	\$ 3,7013	\$ 3,627,256	\$ 2,5320	\$ 2,481,360	\$ 2,5320	\$ 2,481,360	\$ -	\$ 0.0988	\$ 96,844	\$ 2,578,204	
Other-Cons	11	16.92%	11	110,000	\$ 2,6554	\$ 292,092	\$ 2,2820	\$ 251,020	\$ 2,2820	\$ 251,020	\$ -	\$ 0.0952	\$ 10,477	\$ 261,497	Other-Cons	18	17.31%	18	180,000	\$ 3,1160	\$ 560,873	\$ 2,4270	\$ 436,860	\$ 2,4270	\$ 436,860	\$ -	\$ 0.0988	\$ 17,789	\$ 454,649	Other-Cons	19	16.24%	19	190,000	\$ 3,7013	\$ 703,244	\$ 2,5320	\$ 481,080	\$ 2,5320	\$ 481,080	\$ -	\$ 0.0988	\$ 18,776	\$ 499,856	
Total	65	100.0%	65	650,000	\$ 2,6554	\$ 1,726,000	\$ 2,2820	\$ 1,483,300	\$ 2,2820	\$ 1,483,300	\$ -	\$ 0.0952	\$ 61,910	\$ 1,545,210	Total	104	100.0%	104	1,040,000	\$ 3,1160	\$ 3,240,600	\$ 2,4270	\$ 2,524,080	\$ 2,4270	\$ 2,524,080	\$ -	\$ 0.0988	\$ 102,780	\$ 2,626,860	Total	117	100.0%	117	1,170,000	\$ 3,7013	\$ 4,330,500	\$ 2,5320	\$ 2,962,440	\$ 2,5320	\$ 2,962,440	\$ -	\$ 0.0988	\$ 115,620	\$ 3,078,060	

*Prices from 10/23/19 NYMEX market